

Terrafame's net sales in 2019 totalled EUR 310.4 million - EBITDA for the year was at the 2018 level

(The financial data from Terrafame Ltd presented in this factsheet are unaudited FAS figures. Unless otherwise stated, the figures in parentheses refer to the corresponding period of the previous year.)

Year 2019 in brief

- Nickel production increased to 27,468 (27,377) tonnes. Zinc production decreased by 10.4 per cent to 55,222 (61,608) tonnes.
- The average price of nickel in 2019 on the London Metal Exchange was USD 13,926 per tonne (13,122), which converts to EUR 12,439 (11,111) per tonne.
- The average price of zinc in 2019 on the London Metal Exchange was USD 2,547 per tonne (2,922), which converts to EUR 2,275 (2,474) per tonne.
- Net sales for the financial year decreased by 4.7 per cent to EUR 310.4 (325.8) million.
- The net sales in October–December 2019 amounted to EUR 66.8 (77.4) million, which is 13.7 per cent lower than in the corresponding period in 2018 and almost 35 per cent lower compared to July–September 2019. The net sales were low in October as a result of the scheduled shutdown of the metals recovery plant and the unscheduled stoppage at the hydrogen sulphide plant in the fourth quarter.
- The EBITDA for the year was at the 2018 level, i.e. EUR 32.0 (32.8) million.
- EBITDA for the fourth quarter was EUR 0.7 (-1.0) million.
- Operating result for the year amounted to EUR -5.6 (3.0) million.
- Free cash flow from operations was EUR -20.6 (-15.6) million.
- The combined lost-time injury frequency rate of Terrafame and its partner companies in 2019 was 14.2 (8.7). Safe working methods used by both partner companies and own personnel were a source of increased attention in the industrial site throughout the year, and active efforts on safe working methods will continue.
- The construction works for new battery chemicals plant progressed as planned and process equipment installations and recruitments for the production organisation were launched.

Key financial and production figures

	2019 Q4	2018 Q4	Change, %	2019	2018	Change, %
Financial figures						
Net sales, EUR million	66.8	77.4	-13.7 %	310.4	325.8	-4.7 %
EBITDA, EUR million	0.7	-1.0	n.a.	32.0	32.8	-2.5 %
Operating result, EUR million	-9.1	-7.5	n.a.	-5.6	3.0	n.a.
Work in progress, EUR million	186.2	170.7	9.1 %	186.2	170.7	9.1 %
Free cash flow, EUR million ⁽¹⁾	-6.3	-13.6	n.a.	-20.6	-15.6	32.1 %
Capital expenditure, total, EUR million ⁽²⁾	32.6	28.5	14.4 %	130.6	81.5	60.2 %
Sustaining capex, EUR million	14.1	10.0	41.0 %	42.1	28.1	49.8 %
Development and growth capex, EUR million	18.5	18.5	0.0 %	88.5	53.4	65.7 %
Equity, EUR million	349.8	365.6	-4.3 %	349.8	365.6	-4.3 %
Total assets, EUR million	749.5	681.6	10.0 %	749.5	681.6	10.0 %
Ore processing						
Ore and waste rock mined, Mt	7.5	10.9	-31.2 %	32.3	42.2	-23.5 %
Metals production						
Nickel produced, tonnes	6,418	7,710	-16.8 %	27,468	27,377	0.3 %
Zinc produced, tonnes	12,845	15,974	-19.6 %	55,222	61,608	-10.4 %

1) Free cash flow after sustaining capex = EBITDA - Change in net working capital - Sustaining capex excluding right-of-use assets.

2) The quarterly split of sustaining and growth capex has been restated for 1-9/2019.

Terrafame has adopted the IFRS 16 Leases standard as permitted by section 5:5b of the Finnish Accounting Act and by the IAS Regulation (EU) in its financial accounting effective 1 January 2019, using the simplified approach. The cumulative impact of the implementation of the standard has been recognized on the balance sheet and the comparative figures have not been restated. The comparative figures regarding lease liabilities are presented according to the Finnish Accounting Act.

CEO Joni Lukkarainen:

'The annual nickel production increased to 27,468 (27,377) tonnes. Zinc production decreased by 10.4 per cent to 55,222 (61,608) tonnes. The production volume ratio of zinc to nickel is influenced by ore mineralogy and their dissolution ratio in bioleaching. At the start-up of production, significantly more zinc was produced in relation to the normal production ratio. The total production volumes were slightly below the annual target levels, which are set at 30,000 tonnes of nickel and 60,000 tonnes of zinc. This was particularly due to the loss of production resulting from repair measures in the bioleaching area as well as the scheduled stoppage of the metals recovery plant and the unscheduled stoppage of the hydrogen sulphide plant in the fourth quarter.

Terrafame's net sales decreased by 4.7 per cent in 2019, to EUR 310.4 (325.8) million. However, we are pleased that, despite the decline in net sales, the EBITDA for the year reached the 2018 level and amounted to EUR 32.0 (32.8) million.

Strong nickel price fluctuations continued throughout the year. The uncertainty of the global economy kept the price development of nickel down during the first half of the year. In the third quarter, the price of nickel increased sharply, and that was when we achieved the largest quarterly net sales in the company's history and had an excellent EBITDA as well. Towards the end of the year, the market price of nickel started declining again.

In 2019, we continued our determined efforts to further stabilise the production process and to achieve the production volume target levels on a more permanent basis. Our strategic spearhead project – the construction of the battery chemicals plant – also progressed well. Once completed, our new plant will be one of the world's largest production units for nickel sulphate used in electric vehicle batteries. We will also start producing cobalt sulphate used in electric vehicle batteries. The battery chemicals plant will move us forward in the value chain and into the rapidly growing battery chemicals market as a manufacturer of specialty chemicals. The plant's process equipment installations and building of a production organisation are progressing and the commercial production of battery chemicals will be started during the first half of 2021.

In early February the Finnish government decided to grant a uranium extraction permit to Terrafame. This was a positive decision for our business, but we estimate that it will take approximately 2 years until the permit has legal force. After that, the process of getting the uranium extraction plant ready for use including recruitment and training of the personnel will take approximately one year. We estimate that when operating, the uranium plant will employ approximately 30 persons.

Safety is one of the cornerstones of our operating culture. At the end of 2019, the combined 12-month rolling lost-time injury frequency rate (LTIFR) of Terrafame and its partners was 14.2 (8.7). Terrafame found the LTIFR of 33.0 of companies operating at the battery chemicals plant to be very high, which is why more attention was paid to the matter with the contractors. Active efforts on safety matters will be systematically emphasised among our own personnel and the employees of partner companies also in the future.'

Market developments

Electric car and battery markets

Global EV sales were approximately 2,2 million units in 2019. Although EV sales fell in China towards end of the year, mainly reflecting changes in subsidies, China still represented more than a half of the global EV sales. Whereas EV sales were sluggish in China towards the end of the year, the whole year sales were up 35 per cent in Europe year-on-year.

Average pack sizes across all EV classes rose to a sales weighted average of 57 kWh from 53 kWh at the beginning of the year. The global battery demand in 2019 was up 17 per cent compared with 2018 at approximately 118 GWh. Together with increasing average pack sizes also the amount of nickel in the batteries has been increasing. E.g. the market share of NCA batteries increased from 22 per cent at the end of 2018 to 27 percent at the end of 2019 and the market share of NCM 811 batteries, that were launched at the market during 2019, was 5 per cent of all battery categories at the end of 2019.

Nickel and zinc

Strong nickel price fluctuations continued in 2019. The uncertainty of the global economy kept the price development of nickel down during the first half of the year despite the demand exceeding the supply. The price of nickel rose sharply in the third quarter, when the markets speculated on Indonesia's nickel ore ban, and the price peaked at more than USD 18,000 per tonne. Supply exceeded demand in the second half of the year. The 2019 average price of nickel – USD 13,926 (13,122) per tonne – ended up being 6.1 percent higher than the price in 2018. In euros, the average price of nickel was 12,439 (11,111) per tonne.

In October–December 2019, the world market price of nickel was on average USD 15,450 (11,516) per tonne, which was 34.0 percent higher than the price in the corresponding period in 2018, but very close to the price in July–September 2019 (USD 15,551 per tonne).

The price of zinc kept declining in 2019, although the stock levels were also low, with the markets speculating on the possibility of oversupply. In March 2019, the price of zinc rose to over USD 3,000 per tonne at a time of low inventory levels. However, during the end of the year, the price of zinc

started to decline on account of a market imbalance arising from the growing uncertainty of the global economy. The average price was USD 2,547 (2,922) per tonne, which was 12.8 per cent lower than in the corresponding period in 2018. In euros, the average price of zinc was 2,275 (2,474) per tonne.

The world market price of zinc in October–December 2019 was on average USD 2,388 (2,631) per tonne, which was 9.2 per cent lower than the price in the corresponding period in 2018 and 1.6 per cent (USD 2,350 per tonne) lower than in July–September 2019.

The total combined nickel stocks of the London Metal Exchange (LME) and Shanghai Futures Exchange (SHFE) stood at 188,097 (221,659) tonnes at the end of 2019, corresponding to demand of approximately 4 (5) weeks. The stock levels grew during the fourth quarter of 2019 for the first time since the first quarter of 2016. Zinc stock levels declined sharply in late 2018 and the combined stock levels (LME+SHFE) at the end of 2019 were 79,285 (151,850) tonnes. This corresponds to demand of less than a week.

Exchange rate

The US dollar continued to strengthen against the euro towards the end of 2019. The average EUR/USD exchange rate for October–December 1.11 whereas in July–September 2019, it was 1.11. The average EUR/USD exchange rate for the year 2019 was 1.12 whereas in 2018, it was 1.18.

Metals production

The annual production of nickel increased to 27,468 (27,377) tonnes. Zinc production decreased by 10.4 per cent to 55,222 (61,608) tonnes. The production volume ratio of zinc to nickel is influenced by ore mineralogy and their dissolution ratio in bioleaching. At the start-up of production, significantly more zinc was produced in relation to the normal production ratio. The total production volumes were slightly below the annual target levels, which are set at 30,000 tonnes of nickel and 60,000 tonnes of zinc. This was particularly due to the production losses caused by the repair measures in the bioleaching area and stoppages during the fourth quarter.

During the fourth quarter, nickel production decreased by 16.8 per cent compared to the corresponding period in 2018, to 6,418 (7,710) tonnes. Zinc production decreased by 19.6 per cent to 12,845 (15,974) tonnes. During the fourth quarter, production was lower due to the scheduled stoppage of the metals recovery plant and the unscheduled stoppage of the hydrogen sulphide plant.

In March 2019, damage was detected in the liner structure of block 2 of the primary leaching area. Repair measures to construct a new liner structure over the existing structure were immediately initiated. In the primary leaching area, the stacking of ore was at a standstill between 18 March and 20 April. After that, the repairs have progressed as planned in the production area at the same pace with heap reclaiming and stacking of new ore.

Net sales and financial performance

Net sales for January–December 2019 decreased by 4.7 per cent to EUR 310.4 (325.8) million. The net sales were lower than in 2018 due to the loss of production resulting from the repair measures in the bioleaching area as well as the scheduled and unscheduled production stoppages at the metals recovery plant.

Net sales in the fourth quarter amounted to EUR 66.8 million. Net sales decreased by 13.7 per cent compared to the corresponding period in 2018, mainly due to lower production. Net sales decreased by approximately 35 per cent compared to July–September 2019.

The EBITDA for the year was at the 2018 level, i.e. EUR 32.0 (32.8) million.

EBITDA for the fourth quarter was EUR 0.7 (-1.0) million.

Operating result for the year amounted to EUR -5.6 (3.0) million.

Operating result for the fourth quarter was EUR -9.1 (-7.5) million.

Capital expenditure

Capital expenditure during January–December 2019 totalled EUR 130.6 (81.5) million. Of this amount, EUR 88.5 (53.4) million were used to improve productivity and increase capacity, while sustaining capital expenditure amounted to EUR 42.1 (28.1) million.

The key investment targets for improving productivity and increasing capacity were related to the construction of the battery chemicals plant, scheduled to commence in 2021, and its main equipment procurement.

The construction works for the battery chemicals plant progressed as planned in 2019, and process equipment installations were launched in the fourth quarter.

The most significant capital expenditures in sustaining production concerned the purchases of spare parts for mining equipment and the ore crushing line, the modification of the hydrogen sulphide plant, and the repair measures in the bioleaching area.

Environment

In 2019, 4.5 (2.5) million cubic meters of purified water was released from the industrial site. The discharge pipe of Lake Nuasjärvi was in operation from April to mid-July, and the release of water was restarted in late August. In addition to this, the so called old route for discharge waters from Latosuo to Kuusijoki was used from March to June. The substance concentrations of purified water released from the site remained below permit levels during the year.

The environmental permit application for the battery chemicals plant was submitted to the Northern Finland Regional State Administrative Agency in April 2019.

Personnel and occupational safety

At the end of 2019, Terrafame employed 754 (667) people, which is 13.0 per cent more than in 2018. Of the increased amount, 49 were participants in the apprenticeship training.

The first group in the two-year apprenticeship training leading to a professional degree in the processing industry organised by Terrafame, Kainuu Vocational College and OSAO started in the spring of 2019, and a new group started in September. The call for applications for the third group in the apprenticeship training was announced in December 2019. The goal is to train 50 new process engineering professionals annually within the next two years.

The internal and external recruitment of experienced process and maintenance professionals for building a production organisation for the new battery chemicals plant commenced in late 2019. The total personnel of the plant will be more than 100 employees people in the first half of 2021, increasing to approximately 150 once the plant is fully operational.

Active training collaboration is part of Terrafame's personnel strategy. A three-year principal lecturer position in process industry, which was donated by Terrafame, started at Kajaani University of

Applied Sciences KAMK in the spring. The aim is to create a new process technology specialisation programme at KAMK that will be launched in 2020.

Terrafame invests in internal training by providing continuous training for its multidisciplinary employees, in order to develop their competence in the processing sectors, including internal security, environment, quality and equipment trainings.

Approximately 70 partner companies operated regularly in Terrafame's industrial site in 2019, with a total of 735 employees during the review period.

Terrafame's employees suffered 11 (8) lost-time injuries in 2019. The rolling 12-month lost-time injury frequency rate (LTIFR), or number of accidents resulting in absence per one million person-hours, was 9.6 (7.4).

The LTIFR for production and maintenance partner companies was 17.5.

Terrafame found the LTIFR of companies operating in the battery chemicals plant – 33 – to be very high. For this reason, more attention was paid to accidents in cooperation with the contractors.

The combined lost-time injury frequency of Terrafame and all of its partners was 14.2 (8.7).

Active efforts on safety matters will be systematically emphasised among our own personnel and the employees of partner companies also in the future.

Strategy

The company's key strategic goal has been clear from the start of operations: the company aims to be in the most cost-effective 25 per cent of the world's nickel producers. The ramp-up of production has gone smoothly and the company is now set to continue its dedicated and systematic efforts to improve its operational excellence.

Terrafame's strategic direction was outlined in autumn 2018. At the time, the decision was made to invest in a battery chemicals plant. Once completed, the plant will use the metal recovery plant's current main product – nickel cobalt sulphide – as its raw material. When the company starts to refine the intermediates currently sold as a raw material to metal refining companies, it will move forward in the value chain to become a manufacturer of specialty chemicals. The new plant is one of the world's largest production units for nickel sulphate used in electric vehicle batteries.

For Terrafame as a company, moving forward in the refining chain also means repositioning itself in the battery chemicals market. The aim is to turn Terrafame into a brand that displays our company's deep roots in Kainuu as well as its operational strengths: the significant nickel resources of the Sotkamo mine, our unique integrated production process from quarry to battery chemicals, the low carbon footprint of our production, our sustainable and traceable European supply chain as well as our skilled staff.

Significant events after the end of the financial period

The Finnish Government decided on 6 February 2020, to grant a uranium extraction permit to Terrafame. The company submitted the permit application for uranium extraction under the Nuclear Energy Act (990/1987) to the Finnish Government on 30 October 2017. Terrafame already has the necessary chemicals permit and environmental permit. The process of getting the uranium extraction plant ready for use will take approximately one year, during which time the plant's organisation will also be built. However, as the Government decision is subject to appeal at the Supreme

Administrative Court of Finland, Terrafame estimates it will take approximately 2 years until the permit has legal force.

In December 2019 Terrafame started the neutralization process in order to purify and reduce the process solution. The neutralization process increases the sulphate content in the purified water and because of this it is estimated that the sulphate concentration limit will be exceeded from February to April. Exceeding the monthly limit for the sulphate load is likely in April, but it is estimated that the limit will not be exceeded from February to March. Due to all this it is estimated that during 2020, the sulphate load of discharge water will increase compared to 2019, but the load will stay clearly under the quota set for the yearly emissions to water. The neutralization process was launched because the second half of 2019 was extremely rainy in Kainuu. In addition to this, due to high amounts of snow in Kainuu, the meltwaters caused by several mild periods during the exceptional winter have increased the amount of water in the process.

Near-term outlook

Since the end of the review period, the price of nickel in the London Metal Exchange (LME) has remained at the USD 13,000 per tonne level. Nonetheless, the fluctuation of prices has continued to be strong.

The process equipment installation work at the battery chemicals plant is progressing and the commercial production of battery chemicals will commence in early 2021.

Terrafame will continue to take measures to improve its safety culture, production and cost efficiency.

Further information:

Joni Lukkaroinen, CEO, Terrafame Ltd, tel. +358 20 713 0890, joni.lukkaroinen@terrafame.fi
Sanna Päiväniemi, Chief Communications Officer, Terrafame Ltd, tel. +358 20 713 0892,
sanna.paivaniemi@terrafame.fi

Terrafame Ltd is a Finnish multi-metal company founded in 2015, with a mine and metals production plant located in Sotkamo. The company's bioleaching based production process is unique and its carbon footprint is clearly lower compared to traditional nickel production technologies. Terrafame is currently building one of the world's largest production lines for battery chemicals, which will move the company forward in the value chain, from a manufacturer of metal intermediates to a producer of battery-grade chemicals for electric vehicle batteries. In 2019, Terrafame's net sales totalled EUR 310 million and there were approximately 1,500 people working in the company's industrial site, of which partner company employees accounted for approximately half. www.terrafame.fi